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Rick Breitenbach  
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Re: PEIS/PEIR and groundwater storage

Dear Mr. Breitenbach:

So far, I have only read the executive summary and groundwater part 5.4 pages 1-49.

Here are questions I thought would be answered at the onset of the CalFed process. Perhaps you have time to send me an e-mail telling me where these were covered in the meeting packages; or pencil stuff in on this page and mail it to me.

How many dams are in CA? Sierra Club says 1400 big ones and 2600 little ones.

How much water is directly used by Californians annually? (I think I mean "beneficial use", not the water that supports our fisheries and uncultivated plants and trees not grown for harvest.) Lester Snow's 3 9 99 memo, in the 3 24-25 99 meeting package, says 42 or 43 million-acre feet.

What fraction of that water is used by agriculture? I hear 80%.

This data, and perhaps a better definition of "beneficial use" than I have, should be in the executive summary.

I know how CalFed states its goals. I prefer this list:

Guarantee agriculture, all other industries and domestic water users an optimal quantity and quality of water.

Avoid floods. (Good flood plain management can minimize the role of levees.)

Restore the environment.

Increased groundwater storage may be the way to protect the environment from surface storage and provide agriculture with optimal water quantity and quality. The amount of groundwater in a known recharge area can be determined; thus, growers can know how much water they can get at a given time. Groundwater is not lost to evaporation. What per cent of deliberately stored ground water is recoverable?

Do the Central Valley's aquifers contain 102 million acre feet of usable storage, as Estuary volume 9 number 1, 4/99, says Neil Dubrovsky of the U. S. Geological Service says the Valley contains?

If we hope groundwater has a major role to play in improving California's water problems, we must answer these questions:

How much groundwater could we store in California in areas not now used, for water storage?

Could all water available in years like 1998, when farmers were asked to take all the water they could because there was no place to store it, be stored underground promptly enough to prevent run off?

Are there areas known to be able to store groundwater but not fully used?

Could there be areas in California that are suitable for recharge, but are now unknown? What would it cost to search for such areas? We should search at least as thoroughly as the twentieth century searched for oil. Can we restrict our search to areas that have a source for rechargeable water, like areas along our rivers or on their fans? If oil prices collapse again, this would be a good way to employ geologists.

How much water does California now loose to evaporation? Secretary Babbitt has pointed out that there are two reservoirs in the drainage of the Colorado River that each loose one million-acre feet to evaporation each year. Isabella reservoir, on the Kern River, annually loses seven feet of water for each square foot of area.

Would we have to let our streams meander through unpaved flood plains in order to allow the streams to recharge our aquifers? In other words, would we need to manage our flood plains without levees? If so, only farms, parks, natural areas and other relatively flood tolerant uses could occupy flood plains.

If we hope groundwater has a major role to play in improving California's water problems, all areas geologically suitable for recharge, and located near water sources (rivers and/or canals), must be devoted only to recharge. Such areas are rare, so we can not preserve some and develop the rest. All land that can be used for water recharge must be preserved and devoted only to recharge. State Water Plan Bulletin 160-93, recognizes the need to protect valuable recharge land. Do we need legislation to insure preservation of all land suitable for water recharge?

Protection of groundwater is now primarily the job of local government. I fear that some cities and counties will find that paving an area capable of recharge is the highest use of that area for their city or county. Many locally elected officials see the state as forcing them to provide services while taking local taxes to balance the state budget. Such officials may not be concerned with the needs of the state.

An example of the problem with local groundwater control is Section 36 T29S, R26E, along the Kern River in western Bakersfield. The west border of this Section 36 is Allen Road and the Rosedale-Rio Bravo Water Storage District. Building a freeway across section 36 and across RRWSD is debated. Many think giving RRWSD enough land from section 36 so that the volume of water RRWSD stores is unchanged, adequately mitigates the freeway. The rest of section 36 could then be paved. Land in section 36 is said to cost \$30,000 to \$50,000, about ten times more than if it were not zoned for development. What would it be worth if development were forbidden? Can CalFed intervene or advise re section 36?

One can not talk of water without talking of the energy to transfer water and to pump it along the surface or up from the ground. Would it take more energy to raise more groundwater than it takes to build and operate new surface storage?

Thank you for the opportunity to comment,



Arthur Unger